UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/741,860	12/22/2000	David Carlton Moore	088305/0129	8558

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William T. Ellis	ZHEN, LI B

ART UNIT	PAPER NUMBER
2126	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/741,860	MOORE ET AL.
	Examiner	Art Unit
	Li B. Zhen	2126

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _10 August 2004_.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-24_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-24_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1 – 24 are pending in the current application.

Response to Arguments

2.   Applicant's arguments with respect to the claims have been considered but are

moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   **Claims 1 – 12, 15 – 18, 20, 21, 23 and 24 are rejected under 35 U.S.C. 103(a)**

as being unpatentable over "Designing a flexible services-based architecture for

Internet Applications" [hereinafter Mehra, cited in the previous office action] in

view of U.S. Patent No. 6,286,028 to Cohen et al. [hereinafter Cohen].

5.   As to claim 1, Mehra teaches the invention substantially as claimed including an

interface for interfacing between front-end data processing systems and back-end data

processing systems [p. 31, figure in section 3, Client Layer and Database/Existing

Applications], the interface comprising an engine [p. 31, figure in section 3, Context

Processor], a node layer comprising at least one node [p. 31, figure in section 3,

Business Logic Layer], and a utility layer comprising at least one utility [p. 31, figure in

section 3, Interface], and in which:

the engine configured to receive a message containing a request from a front-

end system for a transaction to be performed by a back-end system [p. 32, section

3.2.1],

each node represents business logic interfaces to a back-end system [p. 32,

section 3.3.1],

each node exposes business logic capabilities to the engine [p. 32, the interface

of the Business Controller Object, section 3.3.2];

each utility is coupled as a proxy to a back-end system, and is configured to for

receiving a transaction request from a node, for converting said request to a back-end

system request, for receiving a response from the back-end system, and for routing a

response to the requesting node [p. 32, sections 3.4.1 and 3.4.2],

each node routes a received response to the engine [p. 32, section 3.2.1 "The

business logic layer...returns an XML output data stream"]; and

the engine routes a response to the requesting front-end system [p. 32, section

3.2.1 "The style sheet rendering engine merges the XML data stream with the

appropriate XSL template file to render HTML output to the browser."].

6.   Although, Mehra teaches the invention substantially, Mehra does not specifically

disclose the engines comprising means for interpreting the message to select a relevant

node from a plurality of nodes for interfacing, wherein the engine does not contain any

business logic.

However, Cohen teaches interfacing between front-end data processing systems

and back-end data processing systems [Fig. 1; col. 3, lines 30 – 49], the engine

configured to receive a message containing a request from a front-end system for a

transaction to be performed by a back-end system [Listener Object 103 "listens" for a

trigger sent from an external application; col. 3, lines 63 – 67], and means for

interpreting said message to select a relevant node from a plurality of nodes for

interfacing [operation ID identifies the type of Business Object (BO) required for

execution of the process to be performed; col. 4, lines 1 – 10 and col. 8, line 67 – col. 9,

line 2], wherein the engine does not contain any business logic [listener object is

operatively coupled to the environment means, and to the frontend or the backend

application, for receiving an operation ID from the frontend or the backend application;

col. 1, lines 58 – 61],

each node represents business logic interfaces to a back-end system, each node

exposes business logic capabilities to the engine [Class set 305 having a plurality of

Specific Business Object Classes 305a-e (one for each type of business transaction);

col. 6, line 60 - col. 7, line 9];

the engine comprises means for using the exposed node business logic

capabilities to build a process map linking received request messages with nodes,

wherein the engine uses the process map to select the relevant node from the plurality

of nodes [to instantiate a Business Object from the set of Business Object classes, the

Listener Object 103 receives a trigger and collects an operation ID which identifies the

required Business Object type...When multiple frontend and backend applications are

employed, the operation ID also identifies the relevant frontend and backend

applications. The Listener Object 103 then creates a Business Object of the identified

type; col. 6, lines 40 - 60]; and

      each utility is coupled as a proxy to a back-end system, and is configured to for

receiving a transaction request from a node, for converting said request to a back-end

system request, for receiving a response from the back-end system, and for routing a

response to the requesting node [Each Backend Adapter Class 309a-d defines methods

and/or data variables specific to mapping business data between a Business Object and

the backend application associated with the adapter; col. 9, lines 26 – 46].

7.   It would have been obvious to a person of ordinary skill in the art at the time of

the invention to apply the teaching of interpreting the message to select a relevant node

from a plurality of nodes for interfacing, wherein the engine does not contain any

business logic as taught by Cohen to the invention of Mehra because this provides a

generic interface which can be quickly adapted to new frontend and new backend

applications and enables easily customizable commercial operations [col. 1, lines 28 –

32 of Cohen].

8.   As to claim 2 Mehra as modified teaches the engine comprises means for

dynamically maintains the process map according to the exposed node business logic

capabilities [col. 9, lines 8 – 25 of Cohen].

9.   As to claim 3, Mehra teaches the process map comprises a script file [XML is

used for structured data message; Section 2, p. 31].

10.   As to claim 4, Mehra as modified teaches the process map comprises script

messages, each message having a map associating incoming parameter names with

standardised names [col. 14, line 64 – col. 15, line 30 of Cohen].

11.   As to claim 5, Mehra as modified teaches each message of the process map

specifies an associated node, a list of the parameters the node requires, and values

which it returns for a type of incoming message [mapping chart 601 further comprises a

fourth column 609 that identifies the Order Business Object data variable wherein the

frontend order information is to be stored and a fifth column 611 that identifies the data

type to which the frontend order information must be converted for storage within the

Order Business Object data variable; col. 15, lines 10 – 32 of Cohen].

12.   As to claim 6, Mehra teaches that the utilities interface with the node layer

according to a uniform interface model ["…that provide an abstraction layer that

encapsulates access…"; section 3.3.2, p. 32].

13.   As to claim 7, Mehra as modified teaches the engine calls a plurality of nodes for

a transaction request [col. 7, lines 1 – 10 of Cohen].

14.   As to claim 8, Mehra as modified teaches the engine is configured for calling

nodes in sequence, and for passing the output from a previous node to a next node [col.

7, lines 20 – 35 of Cohen].

15.   As to claim 9, Mehra as modified teaches the engine and each node uses a

hashtable mapping keys to values for passing data and control to each other [col. 12,

lines 52 – 65 of Cohen].

16.   As to claims 10 and 11, Mehra as modified teaches the engine and the nodes

each use a hashtable for returning a result from a back-end system [col. 12, lines 52 –

65 and col. 9, lines 26 – 46 of Cohen].

17.   As to claim 12, Mehra teaches each of the engine and each node comprise an

object instantiated from an object-oriented class [section 3.3.2, p. 32].

18.   As to claim 15, Mehra as modified teaches the engine comprises an externally

visible engine class ["Servlet"; section 3.2.2 "Servlet" of Mehra], an object of which

comprises means for instantiating: a processor object for instantiating said node objects

["Business Object Factory"; section 3.3.1, p. 31 of Mehra]; and a loader object for

loading the process map, and for determining node objects associated with a received

message [col. 4, lines 8 – 18 of Cohen].

19.   As to claim 16, Mehra as modified teaches the engine is configured for

instantiating a parser object for parsing a received message, for placing extracted data

in a hashtable, and for returning the hashtable to the engine object [col. 4, lines 29 – 39

of Cohen].

20.   As to claim 17, Mehra as modified teaches the engine comprises a builder object

configured for automatically updating the process map according to capabilities

exposed by node classes [[col. 9, lines 8 – 25 of Cohen].

21.   As to claim 18, Mehra as modified teaches each node class comprises a method

for returning a string to the engine indicating the node capabilities [a unique identifier

variable for each type of Business Object, defines a state variable for controlling the

runstate( ) method of each Business Object; col. 8, lines 36 – 40 of Cohen].

22.   As to claim 20, Mehra as modified teaches a method of interfacing between front-

end data processing systems and back-end data processing systems [p. 31, figure in

section 3, Client Layer and Database/Existing Applications of Mehra], the method being

performed by an interface comprising an engine [p. 31, figure in section 3, Context

Processor of Mehra] for communicating with the front-end systems and a utility layer for

communicating with the back-end systems, the method comprising the steps of:

the engine receiving from a front-end system a message incorporating a request for a transaction to be performed by a back end system but not indicating a particular back-end system suitable for the transaction [p. 32, section 3.2.1 of Mehra],

the engine using a process map to select one of a plurality of nodes in a node layer which may provide a suitable link to the back-end systems for the request, the process map linking message types to nodes according to exposed business logic capabilities of the nodes [col. 6, lines 40 – 60 of Cohen], wherein the engine does not contain any business logic [col. 1, lines 58 – 61 of Cohen],

the engine passing a request to the selected node [p. 32, the interface of the Business Controller Object, section 3.3.2 of Mehra],

the selected node communicating with a utility with which it is associated to instruct the utility to perform the transaction, receiving a response from the utility, and passing the response back to the node [p. 32, sections 3.4.1 and 3.4.2 of Mehra],

the node passing the response back to the engine [p. 32, section 3.2.1 "The business logic layer...returns an XML output data stream" of Mehra], and the engine passing the response back to the requesting front-end [p. 32, section 3.2.1 "The style sheet rendering engine merges the XML data stream with the appropriate XSL template file to render HTML output to the browser" of Mehra].

23.   As to claim 21, this is rejected for the same reasons as claims 10 and 15 above.

24.   As to claim 23, Mehra teaches the process map is an XML script file [section

3.1.1, p. 31].

25.   As to claim 24, this is a product claim that corresponds to method claim 20; note

the rejection to claim 20 above, which also meets this product claim.

26.   **Claims 13, 14, 19 and 22 are rejected under 35 U.S.C. 103(a) as being**

unpatentable over Mehra and Cohen further in view of U.S. Patent No. 6,434,555

to Frolund et al. [hereinafter Frolund, cited in previous office action].

27.   As to claim 13, Mehra and Cohen teach that each of the engine and each node

comprises means for using a hashtable which maps keys to values for passing data and

control to each other, and the engine comprises means for passing a hashtable as a

parameter as in claims 9 and 10 above. Mehra and Cohen do not teach an execute

method, a commit method, and a rollback method of a node object.

        However, Frolund teaches an execute method, a commit method, and a rollback

method of a node object [Fig. 3].

28.   It would have been obvious to a person of ordinary skill in the art at the time of

the invention to combine the execute, commit, and rollback methods of Frolund with the

systems of Mehra and Cohen because this provides outcome determination so that the

result of a transaction can be used to make a decision [col. 2, lines 28 – 39 of Frolund].

29.   As to claim 14, Mehra as modified teaches the engine is configured for activating

a sequence of nodes for a transaction, and each node is configured for performing a

rollback if a transaction fails [col. 4, lines 21 – 52 of Frolund].

30.   As to claim 19, this is similar to claim 1 and is rejected for the same reasons as

claim 1. As to the additional limitations, Mehra as modified teaches each of the engine

and each node comprises an object instantiated from an object-oriented class [Listener

Object 103 "listens" for a trigger sent from an external application; col. 3, lines 63 – 67;

Business Object (BO) required for execution of the process to be performed; col. 4,

lines 1 – 10 and col. 8, line 67 – col. 9, line 2 of Cohen], and each of the engine and

each node comprises means for using a hashtable which maps keys to values for

passing data and control to each other, and the engine comprises means for passing a

hashtable as a parameter in an execute method, a commit method, and a rollback

method of a node object [col. 4, lines 21 – 52 of Frolund].

31.   As to claim 22, Mehra as modified teaches the engine passes a hashtable as a

parameter in an execute method, a commit method, and a rollback method, and the

node rolls back according to the rollback method if the transaction fails [col. 4, lines 21 –

52 of Frolund].

Conclusion

32.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Li B. Zhen whose telephone number is (571) 272-3768. The examiner can normally be reached on Mon - Fri, 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Li B. Zhen
Examiner
Art Unit 2126

lbz

**SUE LAO
PRIMARY EXAMINER**